Missouri Agricultural Statistics

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Missouri Dairy Exit Survey 2005

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Introduction

Over the last decade substantial changes have occurred in Missouri's milk production sector. Some of the changes taking place within this sector of the industry are most evident in the number of milk producing operations in the state, the milk cow inventory, and the quantity of milk produced.

Table 1. Milk Cows: Number of Operations, 1994-2004[1]

Year	Total	1-29 Head	30-49 Head	50-99 Head	100-199 Head	200+ Head	200-499 Head	500+ Head
				Number				
1994	5,300	2,400	950	1,400	500	50		
1995	5,000	2,200	900	1,300	520	80		
1996	4,800	2,100	880	1,200	540	80		
1997	4,500	1,900	830	1,100	600	70	70	
1998	4,300	1,900	780	990	570		60	
1999	4,100	1,800	760	940	540		60	
2000	3,900	1,700	740	900	510		45	5
2001	3,700	1,600	700	850	500		45	5
2002	3,400	1,500	600	800	450		45	5
2003	3,100	1,400	475	790	380		50	5
2004	2,800	1,300	400	700	330		65	5

1/ USDA, National Agricultural Statistics Service Quick Stats, (NASS Quick Stats) Agricultural Statistics Database. Online 1994-2004 database .

In Missouri, milk is being produced by fewer but larger herds, similar to the national trend. The number of farms, grouped by size of dairy herds, for selected years are shown in Table 1. In 1994, 5,300 farms had milk cow operations but only 2,800 dairy farms existed in Missouri by 2004, a decrease of 47 percent. At the U. S. level the decline for the same period was 45 percent.

Table 2 shows a 32 percent decline in milk production and a 38 percent decline in number of cows being milked in Missouri over the last 10 years. Milk produced per cow however has increased ten percent in the last ten years compared to the U.S. level of 15 percent over the same period. These trends are of major concern to the industry. In an effort to understand and reverse this longtime trend, the Missouri Dairy Growth Council with support of industry, producers' associations, and the Missouri Department of Agriculture requested Missouri Agricultural Statistics Service (MASS) to conduct a survey of Missouri dairy producers who have exited the industry.

This report represents the highlights of the Missouri Dairy Exit Survey 2005. The survey was designed and completed by MASS and was conducted during February and March of 2005. Questionnaires were mailed to 800 past producers with an overall response rate of 39 percent.

Table 2. Annual Milk Production, Milk Cows, and Milk per Cow, 1994-2004[2]

Year	Production	Milk Cows (Average)	Milk Produced per Cow
	million lbs.	*1000 Head*	*pounds*
1994	2,715	197	13,782
1995	2,690	190	14,158
1996	2,443	182	13,423
1997	2,362	177	13,345
1998	2,367	170	13,924
1999	2,237	159	14,069
2000	2,258	154	14,662
2001	1,949	145	13,441
2002	1,946	137	14,204
2003	1,886	129	14,620
2004	1,847	122	15,139

2/ USDA, NASS Quick Stats, Agricultural Statistics Database. Online, 1994-2004 data.

Methodology

The sources used to construct the population and sample included a list of producers who have discontinued dairy farm operations provided by the Missouri Dairy Growth Council (MDGC) as well as a list of farm operators who reported greater than ten milk cows on the 1997 Census of Agriculture but reported zero milk cows on the 2002 Census of Agriculture. More than 1,400 producers were identified from the census analysis. This became the Census of Agriculture Population list. The Census population list was then stratified into size groups by number of milk cows in 1997. The intent of this stratification was to construct groups of operations from which sampling would take place. Operations with less than ten milk cows were not considered commercial dairy producers and were excluded for purposes of this survey.

For the large size group, any businesses with 100 or more cows, sampling was 100 percent; however, sampling was random for the small strata (less than 100). The result was a stratified random sample of 580 operations from the Census of Agriculture population. The MDGC and the Census of Agriculture sample were merged into one master file where duplication or irrelevant addresses were removed. From the merged file, 800 past milk producers were identified as survey sample units.

Data Collection

Data collection consisted of two mailings beginning on February 4, 2005 . A second mailing of 584 was sent to non-respondents on February 28, 2005. Responses to this survey, including a second mailing, were 40 percent from the Census of Agriculture sample list and 38 percent from the list obtained from MDGC with an overall response rate was 39 percent.

Survey Results

The survey was designed to provide non-probability statistical estimates from the reports of exited milk producers. After the returned questionnaires were edited for completeness, 190 reports were determined to be 'usable' by meeting the following conditions: 1) the respondent had operated a dairy operation in the past, and 2) the respondent did not operate a dairy at the time of the survey. The usable reports were summarized using Statistical Analysis Systems (SAS) software. Straight averages and range values of the reported usable positives are published.

The number of years the positive usables have been out of the milk production business averaged 5 years, with a range of one to thirty-five years. The average number of acres they operated at the time of exiting the milk production business was nearly 400 acres. The average reported dairy cows being milked on any given day while they were operating was 76 cows, with an average annual milk production per cow of nearly 15,800 pounds, slightly higher than the state annual average in the last 10 years. The average reported number of days in milk per cow was slightly more than 288 days.

Factors that Influenced Exit: Respondents were asked to select two major factors that influenced their final decision to exit. The top five factors cited by respondents that influenced their final decision to exit the milk production business were: 1) volatile milk prices, 2) shifted their operation to beef, crops, or other agriculture, 3) retirement with no one to take over the operation, 4) health issues of the operator, and 5) economics, could not make it financially (Table 3). These five factors accounted for 71 percent of those recorded for this category. Based on the above results, the major factor that influenced exiting the milk production business was volatile milk prices. The same factors, yet in a different order, were noted by operators exiting dairy but remaining in production agriculture as those that left dairy and agriculture altogether.

Table 3. Major Factors That Influenced Respondents Decision to Exit Milk Production Business

Description	Number of Respondents	Percentage of Total
Volatile milk prices/milk market was disappointing	67	19
Shifted to beef, crops, or other agriculture	60	17
Retirement, no one to take over operation	41	12
Health issues of the operator	41	12
Economics, couldn't make it financially	40	11
Other (specify)	24	7
Wanted to spend more time with family or other interests	22	6
Better opportunities for off farm employment	20	6
Inadequate labor available	18	5
Zoning/EPA/DNR regulations too expensive to adhere to	9	3
Didn't like milking, wanted less work	6	2
Inadequate financing/capital available	3	1
Sold farm for development purposes	2	1
Total	**335**	**100**

Table 4. Primary Ration Used by Dairy Production Operations

Category	Number Responding	Percentage of Total
	number	*percent*
Concentrates along with Pasture/Hay	86	49
Total Mixed Ration (TMR)	46	28
Primarily Pasture with Hay/Concentrate Supplement	41	23

Concentrates along with pasture/hay led the list of type of ration used by the respondents at the time they exited dairy business (Table 4). Others, ranked in descending order were total mixed ration, and primarily pasture with a hay/concentrate supplement.

Fifty-nine percent of the respondents reported they received more than 75 percent of their total gross income from dairy operations before they exited. Approximately 23 percent reported receiving 50-75 percent of their total gross income and 14 percent reported 25-40 percent of their total gross income came from their dairy operation. Only 4 percent reported receiving less than 25 percent of their gross income from their dairy operation (Table 5).

Table 5. Percent of Gross Income from Dairy Portion of Operation

Category	Number Responding	Percentage of Total
	number	*percent*
More than 75 percent	101	59
50 - 75 percent	41	23
25 - 40 percent	25	14
Less than 25 percent	7	4
Total	**174**	**100**

Sixty-nine of the respondents reported eliminating a total of 132 full-time paid workers when they exited the dairy operation. Average peak employment was about two full time workers per operation. Eighty-four part-time paid workers lost jobs as a

result of fifty-four dairy operations exiting the business. Assuming all dairy operations that exited between 1994 and 2004 were similar, the employment loss would have been slightly over 1,700 full-time employees and over 1,000 part-time employees.

Table 6. Type of Operation Before Exit

Category	Number Responding	Percentage of Total
	number	*percent*
Individually operated	135	76
Partnership	25	16
Corporation	8	5
Manager operated	3	2

Seventy-six percent of the businesses were structured as individual operations, 16 percent as partnerships, five percent as corporations, two percent as managed operations, and one percent as something else (Table 6).